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(54) Luggage having rollers

(57) A piece of luggage having a hard shell casing 10 which has a top wall 11 and a bottom wall larger in area than opposing side walls comprises a retractable rollers 35 provided at the bottom wall and a collapsible handle 13 pivotedly mounted on the top wall

11. The handle 13 can be kept in a groove 12 which is provided on the top wall 11 when not in use and can be used to trail or push the luggage, whereby the luggage can also serve as a wheeled carriage to carry things thereover. The rollers 35 are spring-biased to the retracted position and may be locked in the operative position.

FIG. 1

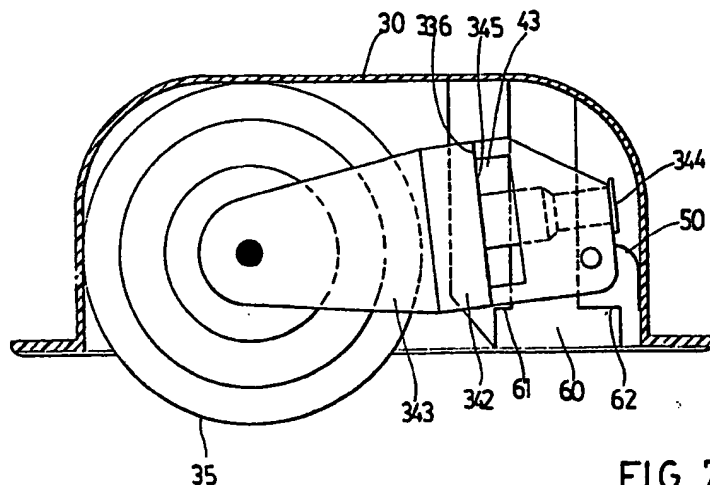
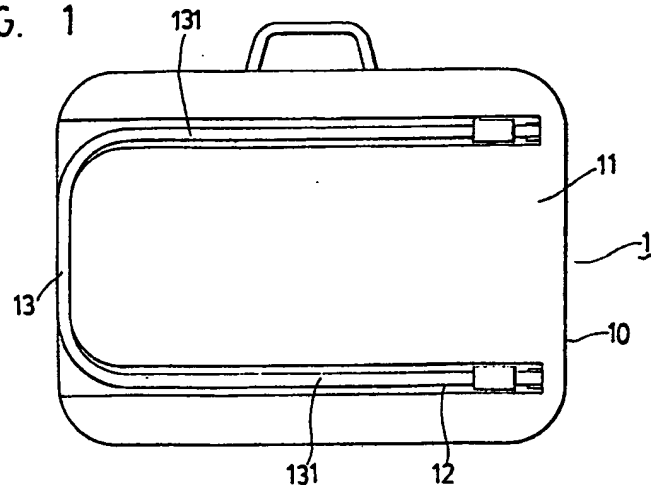


FIG. 7

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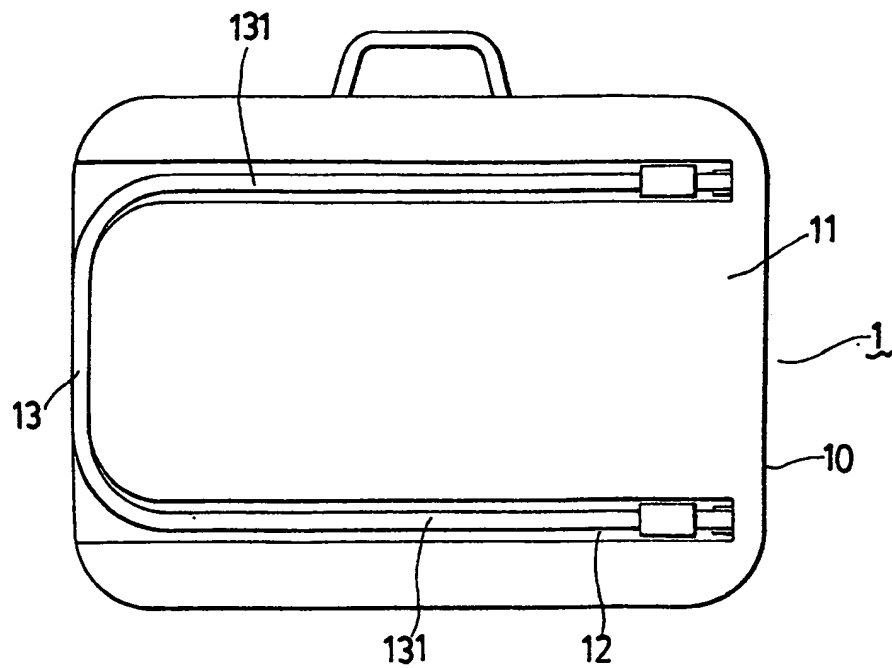


FIG. 1

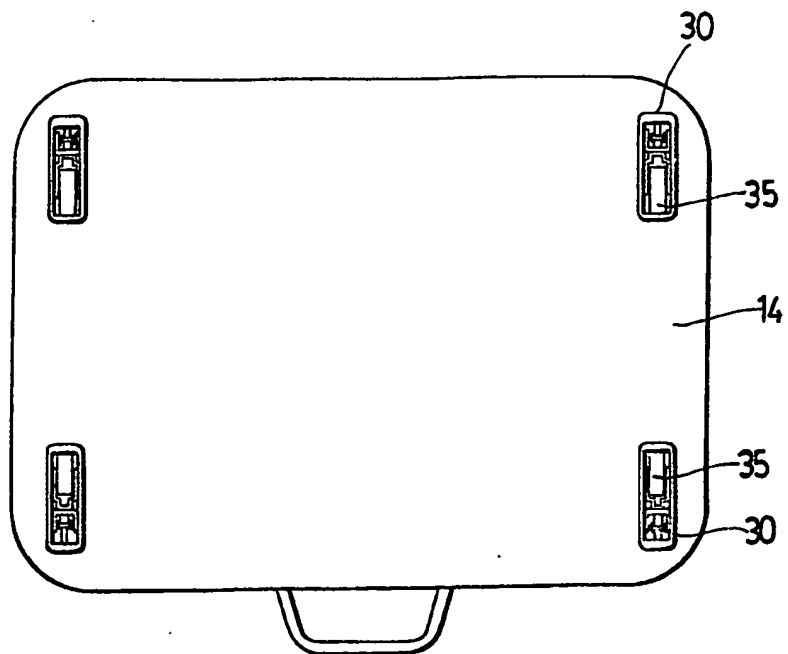


FIG. 2

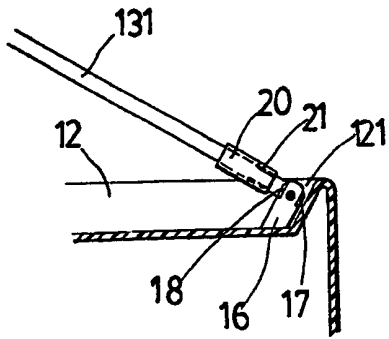


FIG. 3

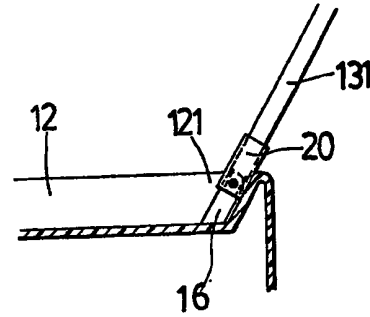


FIG. 4

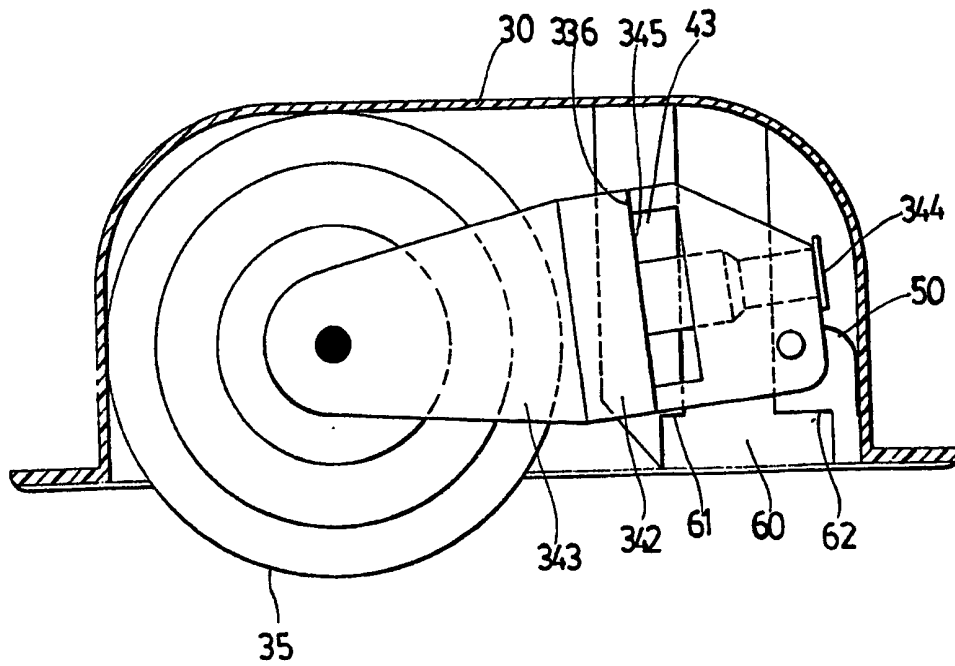


FIG. 7

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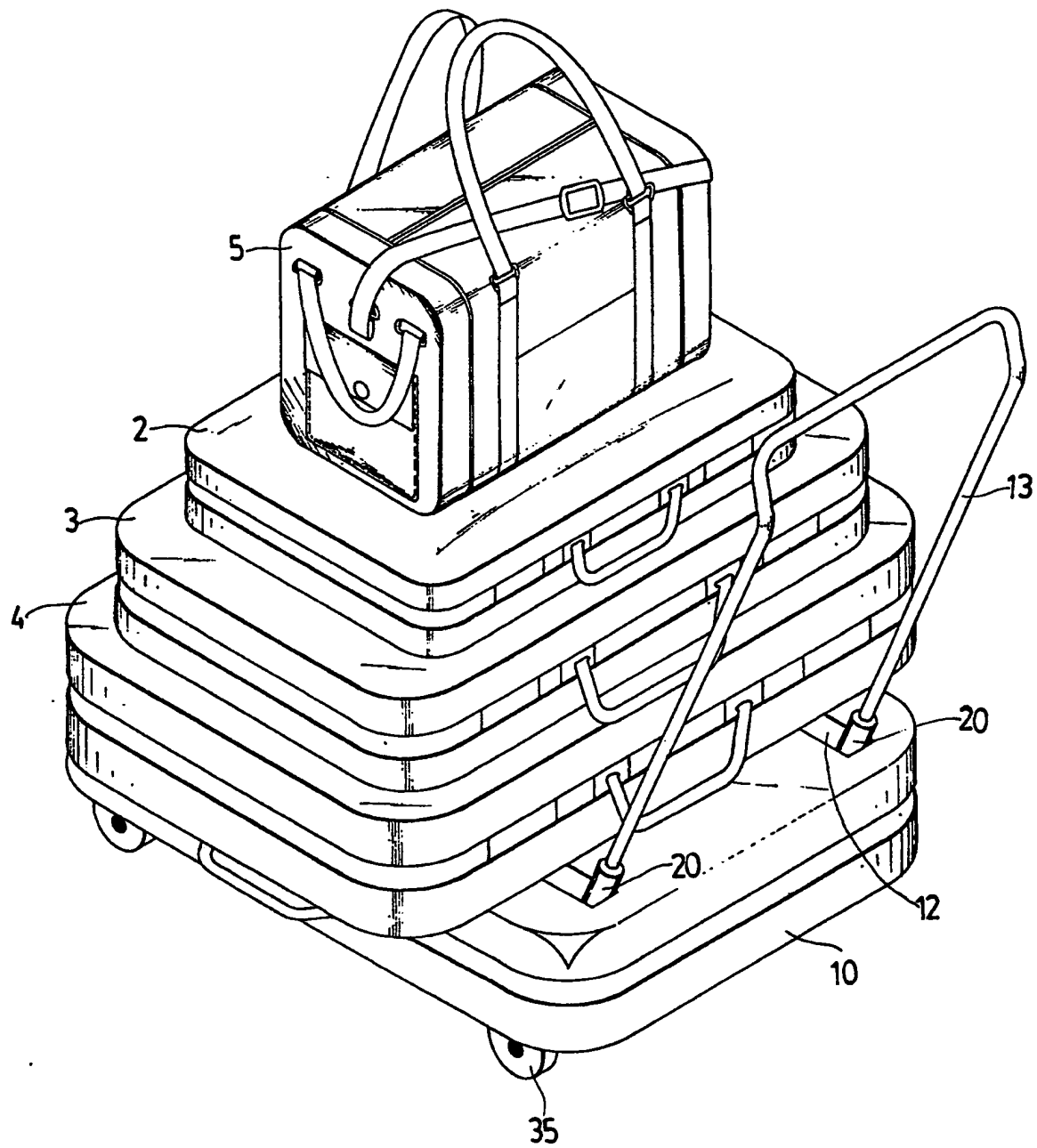


FIG. 5

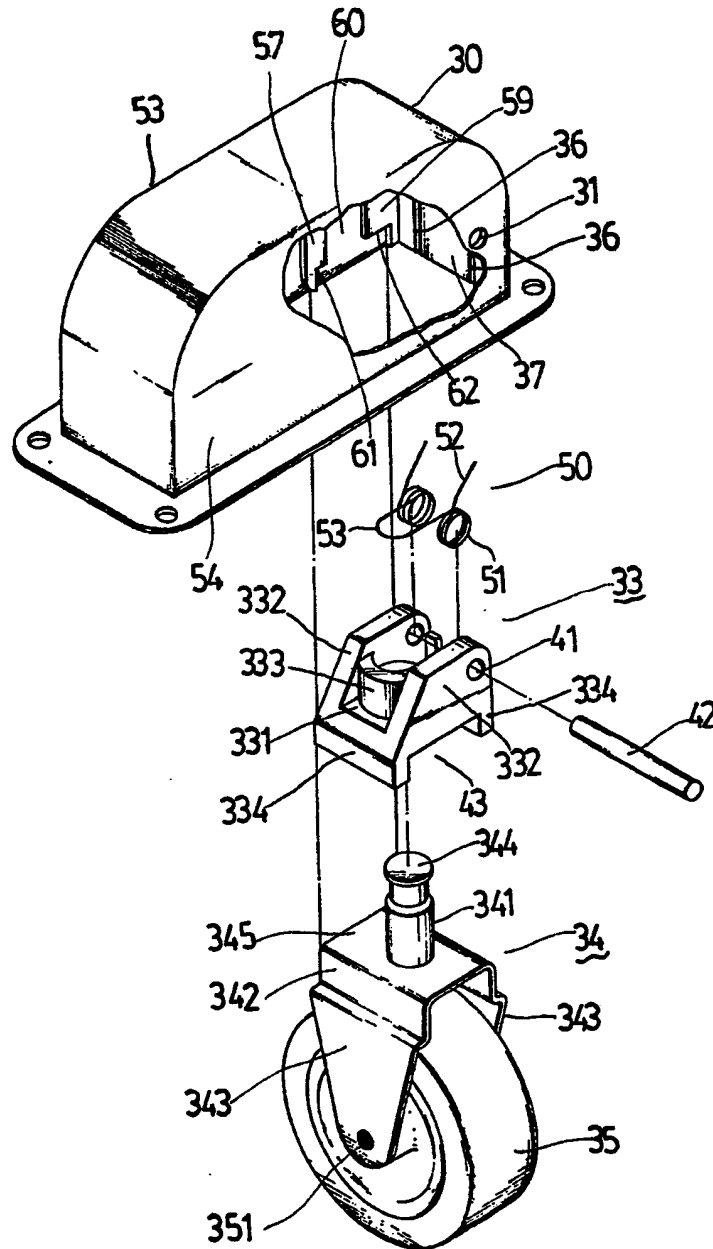


FIG. 6

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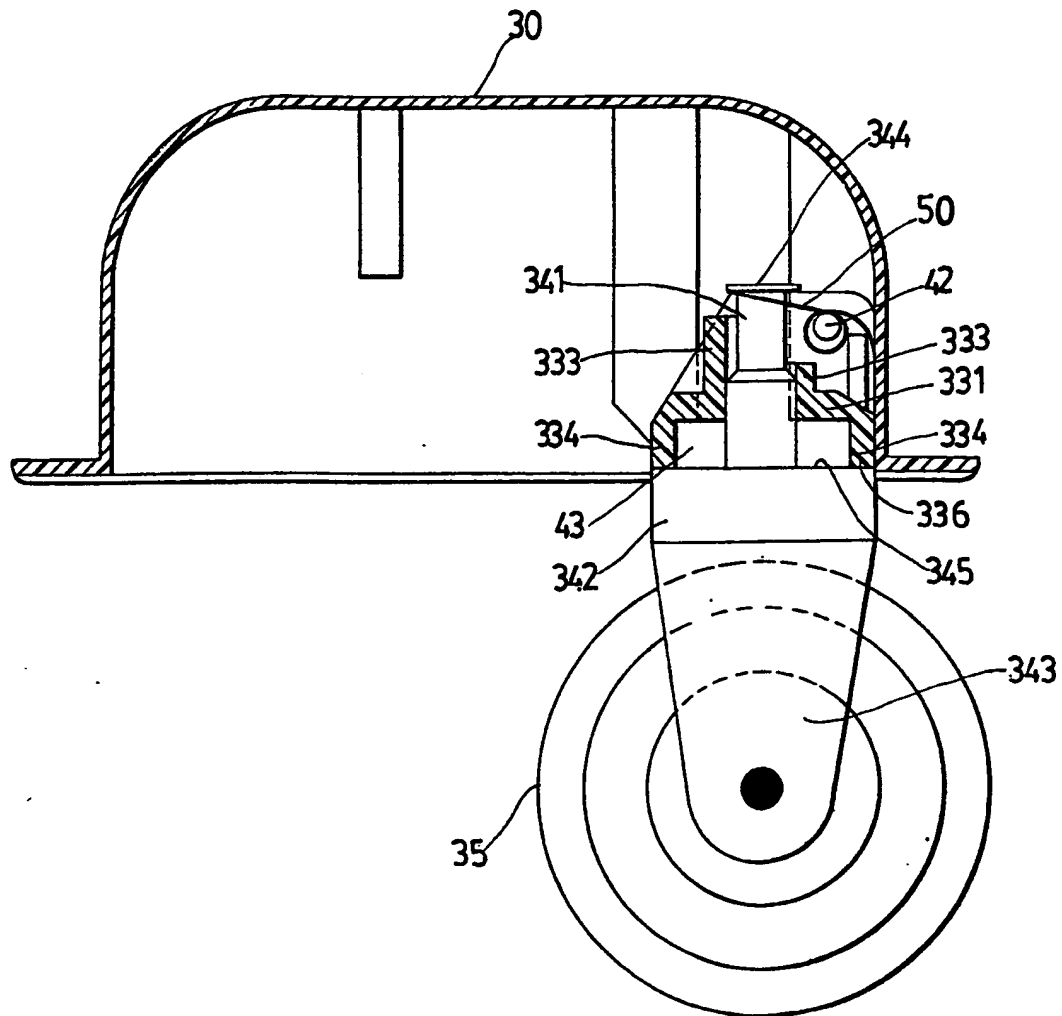


FIG. 8

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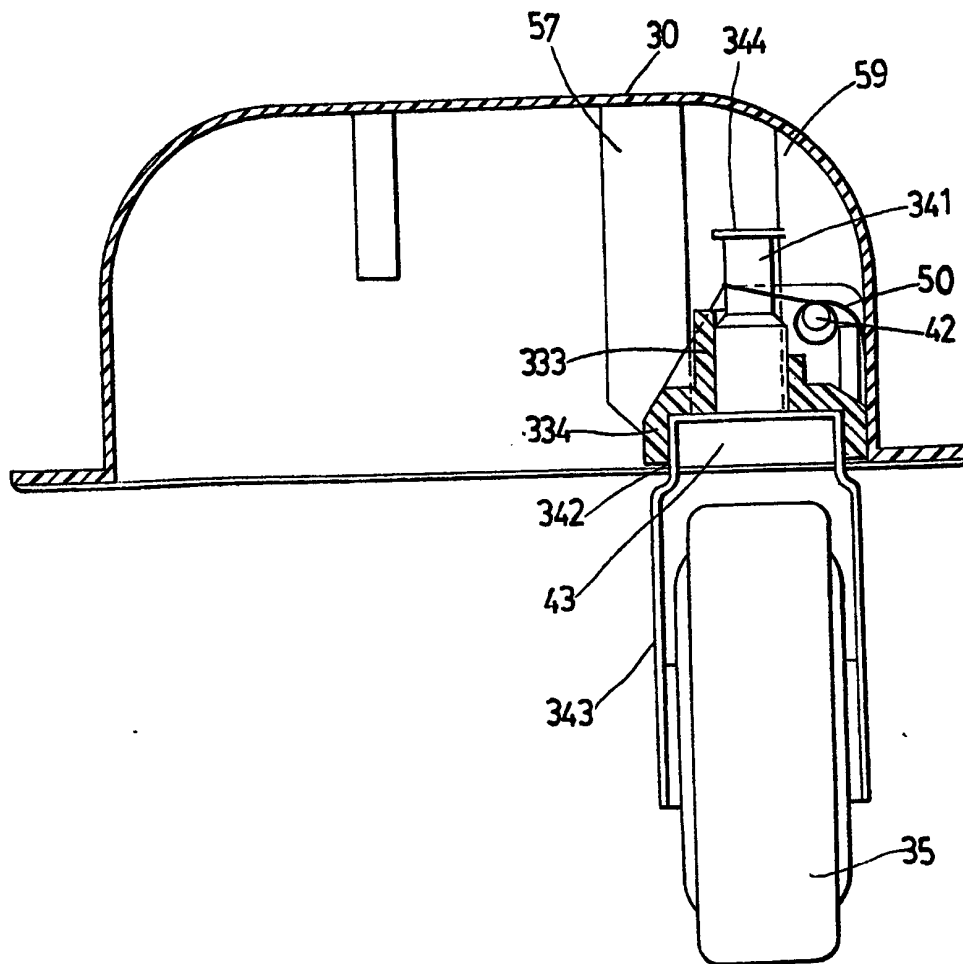


FIG. 9



## SPECIFICATION

## An improved luggage

It has been a common practice to provide luggages, particularly large pieces of luggage, with several rollers on their bottom so that a person can roll the luggage over flat surfaces. Although such luggages are very convenient for use in travelling, one who takes long journey or foreign travelling and has many luggages accompanying therewith may still be troubled with about how to carry all his luggages. Generally he has to get a wheeled carriage, such as a luggage van, for carrying luggages at airports, railway stations etc. This invention is directed to the construction of a luggage that can be used as a luggage van.

An object of the invention is to provide an improved wheeled luggage which can serve as a wheeled carriage, such as luggage van, to carry things thereover.

Another object of the invention is to provide a luggage with retractable rollers.

According to the invention, a luggage comprises; a casing having recess means on one of the walls thereof; retractable roller means; means for housing the retractable roller means respectively secured to the wall of the casing in the recess means, the retractable roller means being movably mounted in the housing means and normally biased to be retracted therein, and capable of swivelling relative to the housing means for engaging the walls of said housing means when it is pulled out of said housing means so that they are kept in operative positions and locked against the movement caused by the biasing action.

According to an aspect of the invention, the retractable roller means comprises; rollers; means for retracting the rollers including, support means pivotally mounted in the housing means, swivel means movably coupled with the support means and connected to the roller means, and spring means associated with the housing means, the support means and the swivel means for biasing them into the housing means.

In another aspect of the invention, the casing has a top wall, a bottom wall and opposing side walls, the top and bottom walls being larger in area than opposing side walls, and the recess means being advantageously provided on the bottom wall. In this case the luggage further comprises, groove provided at the outer face of the top wall, a collapsible handle, adapted for trailing or pushing the luggage, pivotally mounted in the groove and capable of lying therein when not in use.

In further aspect of the invention, the groove and handle are substantially in U shape, and the two ends of the handle are pivotally mounted at the two ends of the groove. Advantageously, this handle is constructed in such a manner that it can be kept rigid when it is stretched out.

These and other objects, features and advantages of the present invention will be more apparent in the following description of a preferred

embodiment with reference to the accompanying drawing, in which:

Fig. 1 is a perspective view of a luggage embodying the invention;

Fig. 2 is a perspective view of the luggage in another position;

Fig. 3 is a schematic sectional view showing the mounting of the handle on the top wall;

Fig. 4 is a schematic sectional view showing the handle rigidly held in it stretched position;

Fig. 5 is a perspective view of the luggage in the position in which it is used as a wheeled carriage;

Fig. 6 is an exploded view of the roller embodying the invention;

Fig. 7 is a partially sectioned view of a retractable roller which is in its retracted position;

Fig. 8 is a partially sectioned view of the retractable roller which is pulled out from the housing means against the bias; and

Fig. 9 is a partially sectioned view of the retractable roller in its operative position, in which the roller is prevented from the retracting movement.

In an illustration of the embodiment, a luggage 1 as shown in Figs. 1 and 2 comprises, a hard shell casing 10 which has a top wall 11, a bottom wall 14 and four opposing side walls (not shown), the top wall 11 and bottom wall 14 being larger in area than opposing walls. There is further provided a groove 12 substantially in U shape on the top wall 11 and a collapsible handle 13 which is made of a rod member and bent to U shape adapted to be received in the groove 12.

As is shown in Figs. 3 and 4, the two arm portions 131 of the handle 13 are respectively pivoted to two brackets 16 which are secured to the top wall 11 at the ends 121 of the groove 12, thereby enabling the handle 13 to turn about the brackets 16. There is further provided two sleeve members 20 each of which is slidably sleeved onto the arm portions 131 of the handle 13 for use in keeping the handle 13 in a rigid position relative to the casing 10 when the handle 13 is stretched out to put into use. Each of the sleeve members 20 has an internally threaded portion 21 which is to be engaged with segmented threaded portions 17 and 18 provided at the two sides of the bracket 16. The rigid position is accomplished by stretching out the handle 13 and sliding down the sleeve members 20 along the arm portions 131 until the threaded portions 17, 18 and 21 are interengaged.

Now referring to Fig. 2 there is further provided four housing means 30 secured to the bottom wall 14 substantially near the four corners of the casing 10. Each housing means 30 is housing a retractable roller which comprises a support means 33, a swivel means 34 and a roller 35, as best shown in Fig. 6. The swivel means 34 includes a cylindrical portion 341 which is in connection with a U-shaped member 342 having extended arm portions 343. The roller 35 is mounted on an axle 351 of which the two ends are respectively fixed in the extended arm portions

343.

As shown in Fig. 6 the support means 33 includes, a base member 331, two upwardly projected members 332 extending from the ends of the base member 331. The base member 331 is provided with an opening (not shown) and an annularly projected member 333 extending from the circular edge of the opening for receiving the cylindrical portion 341 in a movable position as can be easily seen Fig. 6 and 8. There are further provided two pin holes 41 in the upwardly projected members 332 through which a pin member 42 passes. This pin member 42 is then inserted in the two holes 31 of the housing means 30 for movably mounting the support means 33 in said housing means 30. The base member 331 further has two downwardly extending members 334, thereby forming a channel 43 between the two members 334. This channel 43 can receive the U-shaped member 342 when the cylindrical portion 341 is inserted into the opening of the base member 331.

Referring again to Fig. 6, there is further provided a spring member 50 which has, two helical portions 51 sleeved onto the pin member 42, two upwardly extending end portions 52, and a U-shaped intermediate portion 53. The intermediate portion 53 is engaged with the inserted cylindrical portion 341 at the head 344 thereof, and the end portions 52 are engaged in two grooves 36 which are provided in the wall 37 of the casing 30, as will best be seen in Figs. 6, 7, and 8. It would be appreciated that the spring means 50 normally biases the swivel means 34 as well as the support means 33 to a position in which they are kept retracted in the housing means 30. At this condition the axle 351 of the roller 35 lies in parallel with the axis of the channel 43 and the U-shaped member 342 lies across the channel 43 with the upper face 345 thereof abutted against the edges 336 of the downwardly extended member 334 by the tension of the spring means 50 as is best shown in Fig. 7.

As shown in Fig. 6, there is further provided projections 57 and 59, on the walls 53 and 54 of the housing means 30 which confines recesses 60 having shoulder portions 61 and 62 for engaging with the U-shaped member 342 so as to lock it against the movement caused by the biasing action of the spring means 50. When the retractable rollers 35 is pulled out from the housing means 30 against the biasing force of the spring 50 it will be in the position as shown in Fig. 8. The 90° swivelling of the swivel means relative to the support means 30 from that position makes the swivel means 34 enter into the channel 43 as shown in Fig. 9. As the U-shaped member 342 of the swivel means 34 has its axial length somewhat longer than that of the channel 43, portions of the U-shaped member 342 is protruded from the two ends of the channel 43. This is not illustrated in the drawings, but it can be

understood that these protruded portions will be engaged with the shoulder portions 61 and 62 of the walls 53 and 54 of the housing means 30 after swivelling the swivel means and positioning the U-shaped member in the recesses 60. When the support means the swivel means are locked against the movement caused by the biasing action of the spring means 50 the rollers 35 are thereby placed in their operative positions in which the luggage 1 can be rolled thereover.

With the invention thus explained, it is apparent that obvious modification and variations can be made without departing from the scope of the invention. It is therefore intended that the invention be limited only as indicated in the appended claims.

#### CLAIMS

1. A luggage comprising:
  - a casing having recess means on one of the walls thereof;
  - retractable roller means;
  - means for housing said retractable roller means
- respectively secured to the wall of said casing in said recess means, said retractable roller means being movably mounted in said housing and normally biased to be retracted therein, and capable of swivelling for engaging the walls of said housing means when it is pulled out of said housing means so that they are kept in operative positions and locked against the movement caused by the biasing action.
2. A luggage as claimed in Claim 1, wherein said retractable roller means comprises; roller means; means for retracting said rollers including, support means pivotally mounted in said housing means, swivel means movably coupled with said support means and connected to said roller means and spring means associated with said housing means, said support means and said swivel means for biasing them into said housing means.
3. A luggage as claimed in Claim 2, in which said casing includes a top wall, a bottom wall and opposing side walls, said top and bottom walls being larger in area than opposing side walls, said recess means being provided on said bottom wall, and said luggage further comprising, a groove provided at the outer face of the top wall, a collapsible handle adapted for trailing or pushing the luggage, pivotally mounted in said groove and capable of lying therein when not in use.
4. A luggage as claimed in Claim 3, wherein said groove and handle are substantially in U-shape, and the two ends of said handle pivotally mounted at the two ends of said groove.
5. A luggage as claimed in Claim 4, wherein said handle includes means for holding said handle in a rigid position when it is stretched out.
6. A luggage substantially as hereinbefore described with reference to the accompanying drawings.